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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,844	12/31/2001	Paras Shah	H052617.1139US0	9675

7590 08/17/2004

IP ADMINISTRATION HEWLETT PACKARD COMPANY
 LEGAL DEPARTMENT MS 35
 P O BOX 272400
 FORT COLLINS, CO 80527-2400

EXAMINER

KING, JUSTIN

ART UNIT	PAPER NUMBER
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2111

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/038,844

Applicant(s)

SHAH ET AL.

Examiner

Justin I. King

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant should update the status of the incorporated patent/patent applications on page 2, 2nd paragraph.
2. Applicant should clearly state the distinction between the structures 140 and 149, 142 and 145, 180 and 185, 150 and 152, 130 and 139, 160 and 162, 187 and 186, 135 and 131, 120 and 122, and 110 and 112 in both the drawing and specification.

Drawings

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed transaction queue identifier in the claim 8 and the multiple channels in the claim 14 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of

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the claimed invention. The specification does not disclose the transaction queue identifier of the claim 8.

7. Claims 12-20 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. A set of buffers for each child-link to hold incoming transactions and at least two TOQs for each child link to provide separate transaction ordering for the child link (page 3, Summary of the Invention, 1st paragraph) are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The multiple TOQs are essential to track each child link's multiple transaction sources.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 12-13 and 15-30 are rejected under 35 U.S.C. 102(a) as being anticipated by the admitted prior art.

Referring to claim 12: The prior art discloses a plurality of grandchild-links (figure 1, structures 162 and 164) for receiving a plurality of transactions; a child-link (figure 1, structure 152) for sending the plurality of transactions received by the plurality of grandchild-links; and a transaction identifier communication link (figure 1, structure 152) for sending a plurality of transaction identifiers associated with the plurality of transactions sent on the child-link. Each data packet's source connection identifier and

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designation connection identifier are the claimed transaction identifier for the transaction link. Hence, the claim is anticipated by the prior art.

Referring to claim 13: The prior art discloses that the transaction identifier communication link comprises the child-link.

Referring to claim 15: The prior art discloses that the link is associated with a transaction identifier (Application, page 2, lines 3-4, page 3, lines 1-2).

Referring to claim 16: The prior art discloses a one-to-one relationship (Application, page 3, line 1); thus, each one in the plurality of links is associated with its transaction identifier.

Referring to claim 17: The prior art discloses the one-to-many relationship (Application, page 3, line 4); thus, it discloses least two of the plurality of grandchild-links are associated with the same transaction identifier of the plurality of transaction identifiers. Furthermore, a transaction between two devices on two buses at the level 0 has the transaction identifier associated two grandchild-links.

Referring to claim 18: The prior art discloses that the grandchild-link is connected to a bus (figure 1).

Referring to claim 19: The prior art discloses that the grandchild-link is connected to a bus-bridge (figure 1).

Referring to claim 20: The prior art discloses that the grandchild-link is connected to a bus (figure 1, structure 160 connects to structure 149 via the structures 139 and 152).

Referring to claim 21: The prior art discloses receiving a transaction on the child-link (figure 1, structure 152). Each data packet's source connection identifier and designation connection identifier are the claimed transaction identifier for the transaction

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link; thus, the prior art discloses receiving a transaction identifier for the transaction link (figure 1, structure 152, Application, page 2, line 3); matching the transaction identifier to a transaction order queue of the plurality of transaction order queues (Application, page 3, line 1, one-to-one relationship, figure 1, structures 142 and 144) for the child-link; and routing the transaction to the transaction order queue. Hence, claim is anticipated by the prior art.

Referring to claim 22: The prior art discloses a transaction buffer for the child-link, further comprising the step of storing the transaction in the transaction buffer (figure 1, structure 180).

Referring to claim 23: The prior art discloses a plurality of transaction buffers (figure 1, structures 180 and 182) for the child-link and for storing the transaction. The prior art discloses a one-to-one relationship between the buffer and transaction order queue (Application, page 3, line 1), and since the transaction order queue stores the identifiers, the prior art discloses matching the transaction identifier to a transaction buffer of the plurality of transaction buffers for the child link. Since the transaction buffer is to store the transaction, and routing is the purpose of the bridge, the prior art includes routing the transaction to the transaction buffer.

Referring to claim 24: The prior art discloses storing transaction buffer identifier (Application, page 2, line 3), which is receiving the transaction identifier on the child-link.

Referring to claim 25: The prior art discloses a one-to-one relationship between the buffer and transaction order queue (Application, page 3, line 1), and since the transaction order queue stores the identifiers, the prior art discloses matching the

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transaction identifier to a transaction buffer of the plurality of transaction buffers for the child link.

Referring to claim 26: The prior art discloses receiving a transaction on the grandchild-link (figure 1, structure 162) and sending transaction to the parent bridge. Each data packet's source connection identifier and designation connection identifier are the claimed transaction identifier for the transaction link; hence, the prior art discloses sending the transaction identifier to the parent-bridge. Thus, the claim is anticipated by the prior art.

Referring to claim 27: The prior art discloses that the transaction identifier is sent to the parent-bridge on a child-link (figure 1, structure 152).

Referring to claim 28: Since each data packet's source connection identifier and designation connection identifier are the claimed transaction identifier for the transaction link, it is said that the transaction identifier is determined by the grandchild-link on which the transaction was received.

Referring to claim 29: Since each data packet's connection identifier exclusively identifies the source, it is said that the transaction identifier exclusively identifies a grandchild-link of the plurality of grandchild-links.

Referring to claim 30: The prior art discloses the one-to-many relationship (Application, page 3, line 4); thus, it discloses least two of the plurality of grandchild-links are associated with the same transaction identifier of the plurality of transaction identifiers. Furthermore, a transaction between two devices on two buses at the level 0 has the transaction identifier associated two grandchild-links.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1-7, 9-11, 14, and 31-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the admitted prior art and MPEP 2144.04, or the combination of the admitted prior art and judicial notice.

Referring to claim 1: The admitted prior art discloses a child-link (Specification, pages 1-3, figure 1, structure 152) for receiving a plurality of transactions; and a transaction identifier communication link (figure 1, structure 152) for receiving a plurality of transaction identifier (content stored in figure 1, structure 145) for identifying the plurality of transactions; and a plurality of transaction order queues (figure 1, structure 145), and each data packet's source connection identifier and designation connection identifier are the claimed transaction identifier for the transaction link. The prior art does not disclose a plurality of transaction order queues associated with one child-link. Both MPEP and the court have held that duplication of essential working

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parts of a device involves only routine skill in the art (MPEP 2144 and *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8). Thus, it would have been obvious to one having ordinary skill in the computer art at the time Applicant made the invention to multiply the transaction order queues because both MPEP and the court have held that it only involves routine skill in the art to duplicate essential working parts.

Referring to claim 2: The admitted prior art discloses that the transaction identifier communication link is the child-link.

Referring to claim 3: The admitted prior art discloses a transaction buffer (figure 1, structure 185) associated with the child-link.

Referring to claim 4: The prior art does not disclose a plurality of transaction buffer associated with one child-link. Both MPEP and the court have held that duplication of essential working parts of a device involves only routine skill in the art (MPEP 2144 and *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8).

Referring to claim 5: The prior art discloses a plurality of channels (figure 1, structures 162 and 164); wherein at least one channel of the plurality of channels is used to receive the plurality of transaction identifiers (transactions from bus devices, figure 1, structures 110).

Referring to claim 6: The prior art discloses a plurality of child-links (figure 1, structure 150 and additional high speed links); and both MPEP and the court have held that duplication of essential working parts of a device involves only routine skill in the art (MPEP 2144 and *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8), thus, employing a plurality of transaction order queues only involves routine skill in the computer art.

Referring to claim 7: Each bridge is inherent to route a transaction with a transaction identifier to a matching transaction order queue, and the routing means is the claimed routing mechanism.

Referring to claim 9: Each bridge is inherent to route a transaction with a transaction identifier to a matching transaction order queue, and the routing means is the claimed routing mechanism. The prior art discloses that the transaction queue stores identifiers for certain transactions to ensure ordering rules (Application, page 2, lines 6-7), thus the inherent routing behavior for those transactions without transaction order rule will be the default routing behavior. Although the prior art does not explicitly disclose a default queue for those transaction, both MPEP 2144 and court have held that both the duplication of the essential working parts of a device and constructing a formerly integrated object in separate elements involve only routine skill in the art; thus, it would only involve routine skill in the computer art at the time Applicant made the invention to duplicate the queue and separate the different types of transactions because it only involves routine skill in the art to duplicate the essential elements of a device and separate parts of an formerly integrated device.

Referring to claim 10: The prior art discloses bus-bridges.

Referring to claim 11: The prior art discloses a bridge-bridge.

Referring to claim 14: The prior art discloses that the child-bridge has a child-link, and the child-link has at least one channel for transmitting the plurality of transaction identifier. The prior art does not explicitly disclose a plurality of channels. Both MPEP 2144 and the court have held that the duplication of the essential working parts of a device involves only routine skill in the art; thus, it would only involve routine

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skill in the computer art at the time Applicant made the invention to duplicate the link channels because it only involves routine skill in the computer art to duplicate the essential parts of a device.

Referring to claim 31: The prior art discloses a parent-bridge (figure 1, structure 149) including a child link (figure 1, structure 152); and a plurality of transaction order queues (figure 1, structures 142 and 144) connected to the child-link; and a child-bridge (figure 1, structure 139) connected via the child-link to the parent bridge and further comprising a plurality of grandchild-links (figure 1, structures 162 and 164). The prior art does not explicitly disclose a plurality of processors, but prior art at least includes one processors. Both MPEP 2144 and the court have held that duplication of the essential working parts of a device involves only routine skill in the art; thus, it would only involve routine skill in the computer art at the time Applicant made the invention to duplicate the processors because it only involves routine skill in the art to duplicate the essential elements of a device.

Referring to claim 32: The prior art discloses a plurality of child-links to a plurality of child-bridges (figure 1, level 1).

Referring to claim 33: The prior art discloses that the child-bridge transmits a transaction to the parent bridge (figure 1, via the structure 152). And each data packet's source connection identifier and designation connection identifier are the claimed transaction identifier for the transaction link.

Referring to claim 34: The prior art discloses matching the transaction identifier to a transaction order queue of the plurality of transaction order queues (Application, page 3, line 1, one-to-one relationship, figure 1, structures 142 and 144).

Referring to claim 35: The prior art discloses a one-to-one relationship between the buffer and transaction order queue (Application, page 3, line 1), and since the transaction order queue stores the identifiers, the prior art discloses matching the transaction identifier to a transaction buffer of the plurality of transaction buffers for the child link. Furthermore, each data packet's connection identifier exclusively identifies the grandchild-link if the source connection is a device under that grandchild-link.

Referring to claim 36: It is the bridge's purpose to route the data to its designation.

Referring to claim 37: The prior art discloses the transaction buffer (figure 1, structures 180 and 186).

Referring to claim 38: The prior art discloses a plurality of transaction buffers (figure 1, structures 180, 182, and 186) connected to the child-link.

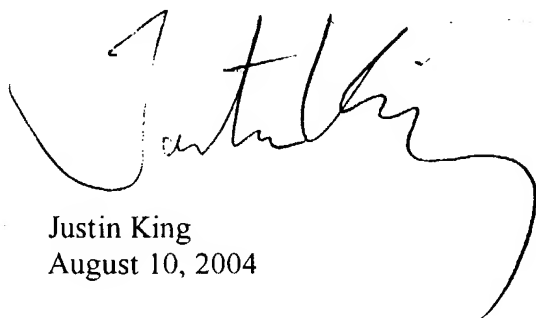
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Conclusion


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin I. King whose telephone number is 703-305-4571. The examiner can normally be reached on Monday through Friday, 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 703-308-3110. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin King
August 10, 2004



XUAN M. THAI
PRIMARY EXAMINER
TC 2100